

[0004] Therefore, an object of the present invention is to provide a current-limiting device with liquid metal, the current-limiting device having an improved current-limiting factor and response time.

After paragraph [0004], please insert paragraph [0004.1] as follows:

--[0004.1] The present invention provides a self-recovering current-limiting device including a liquid metal. The device includes a first and a second electrode for connection to an electric circuit to be protected, each of the first and second electrodes being made of a respective solid metal; a plurality of pressure-resistant insulating bodies; a plurality of insulating intermediate walls supported by the insulating bodies, the plurality of insulating intermediate walls and the plurality of pressure-resistant insulating bodies defining a plurality of compression spaces, the plurality of insulating intermediate walls defining a plurality of connecting channels, the plurality of compression spaces being disposed one behind the other between the first and second electrodes and being at least partially filled with the liquid metal; a first connecting conductor connected to the first electrode and disposed below the plurality of compression spaces and having an inverse current direction; and a ferromagnetic body disposed above the plurality of compression spaces.--.

Please delete paragraph [0005].

Please amend paragraph [0006] as follows:

[0006] The repulsive electromagnetic forces produced by the opposite current path flow in the first connecting conductor and in the liquid metal as well as the concentration of the magnetic field by the ferromagnetic body deviate the current path inside the current-limiting device in such a manner that, on one hand, an electric arc developing the event of a short circuit is lengthened and, on the other hand, the pinch pressure arising in the case of higher currents gives rise to a quicker pinch-off of the current path in the region of the connecting channels. The magnetic forces which are decisive in the process are in square proportion to the current so that the described effect is negligible during nominal operation but the positive influence on the current-limiting behavior occurs in the range of the short-circuit currents. The described acting mechanism is self-acting, that is, it is based on the tripping action of a short-circuit current and of the resulting magnetic field.

Before paragraph [0010], please change the heading “Brief Description of the Drawings” to --Brief Description of the Drawing--.

Please delete paragraph [0010].

After paragraph [0010], please insert paragraph [0010.1] as follows:

--[0010.1] The present invention is elaborated on below based on exemplary embodiments with reference to the drawing, in which:

Fig. 1 shows a longitudinal section of a current-limiting device according to the present invention.--.

Before paragraph [0011], please change the heading “Best Ways of Implementing the Present Invention” to --Detailed Description--.

Please amend paragraph [0011] as follows:

[0011] Single-pole current-limiting device 1 includes an electrode 11, 12 made of solid metal, preferably of copper, on each of the two sides, respectively, the electrode having a rotationally symmetrical design and merging into an outer connecting conductor 21, 22, respectively. Located between electrodes 11 and 12, are a plurality of compression spaces 3 which are formed by a corresponding number of ring-shaped sealing disks 4 and a corresponding number of insulating intermediate walls 6. Electrodes 11 and 12, sealing disks 4, and intermediate walls 6 are supported by a molded housing 5, known devices being provided for sealing compression spaces 3 and frictionally connecting elements 11, 12, 4 and 6 which are supported in molded housing 5, however, the known devices not being shown for reasons of clarity. The device for sealing can be, for example, sealing rings between sealing disks 4 and intermediate walls 6 and electrodes 11, 12, respectively. The device for frictionally connecting can be, for example, continuous clamping bolts along the two lines 7. The two outer compression spaces 3 are each laterally bounded by one of electrodes 11 and 12, respectively, and by an intermediate wall 6. Inner compression spaces 3 are each laterally bounded by two intermediate walls 6. The generally multi-part molded housing 5 and sealing disks 4 are pressure-resistant first and second insulating bodies. All compression spaces 3 are at least partially filled with a liquid metal 8, for example, a GaInSn alloy. Located above liquid metal 8 is, for example, a vacuum. Intermediate walls 6 are provided with connecting channels 9 below the liquid level. Connecting channels 9 are also filled with liquid metal 8.